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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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05/09/2001

Jun Koyama

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01/02/2004

ERIC ROBINSON

PMB 955

21010 SOUTHBANK ST.

POTOMAC FALLS, VA 20165

EXAMINER

KOVALICK, VINCENT E

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 01/02/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,433

Applicant(s)

KOYAMA ET AL.

Examiner

Vincent E Kovalick

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/23/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28,29,33,37-39,43 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33 and 33/44 is/are allowed.
- 6) ☒ Claim(s) 28,29,37-39 and 43-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,5,7&11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment and Election Requirement

1. This Office Action is in response to Applicant's Amendment and Response to Election Requirement dated September 23, 2003 in response to USPTO Office Action dated August 21, 2003. The cancellation of claims 1-27, and the election of Species 1, Figs 5 and 6 with the designation of claims 28, 29, 33, 37-39, 43 and 44 as reading on the elected species has been entered in the record.

The substitute specification (paper No. 6) submitted December 21, 2001 has been entered in the record.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 28 and 37-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (USP 6,646,288).

Relative to claim 28, Yamazaki et al. **teaches** a Liquid Crystal Display (LCD) device having high operation performance, in which a TFT is used in an active matrix type display device having a pixel section and a driver circuit section on the same substrate (col. 1, lines 61-67 and col. 2, lines 1-14); Yamazaki et al. further **teaches** a semiconductor device including at least a

Art Unit: 2673

pixel portion , a driver circuit for the pixel portion, and a memory portion, wherein said pixel portion , said driver circuit for the pixel portion and said memory portion are formed over the same substrate, and the semiconductor device has a function for displaying an image in accordance with image data stored in said memory portion (col. 7, lines 1-7, col. 26, lines 66-67; col. 27, lines 1-7 and Figs. 15-16).

Regarding claim 37, Yamazaki et al. **teaches** said semiconductor device wherein said semiconductor device has a function of displaying a still image in accordance with the image data stored in said memory portion (col. 27, lines 48-60 and Fig. 16).

As to claim 38, Yamazaki et al. **teaches** said semiconductor device wherein said semiconductor device includes a memory control circuit and said memory control circuit and said memory portion are formed over the same substrate (col. 27, lines 48-60).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 29, 39 and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. as applied to claim 28 in item 3 hereinabove, and further in view of Shin (USP 6,323,836).

Relative to claim 29, Yamazaki et al. **does not teach** a semiconductor device including at least a pixel portion, a driver circuit for the pixel portion, and a memory portion wherein, said pixel

Art Unit: 2673

portion is formed over a first substrate, said driver circuit for the pixel portion and said memory portion are formed over a second substrate, said second substrate is provided in a region except for said pixel portion on said first substrate and is connected with said pixel region such that a signal from said driver circuit for the pixel portion is input to said pixel portion, and the semiconductor device has a function for displaying an image in accordance with image data stored in said memory portion.

Yamazaki et al. teaches a Liquid Crystal Display (LCD) in which a TFT is used in an active matrix type display device having a pixel section and a driver circuit section on the same substrate.

Shin **teaches** a driving circuit for a Liquid Crystal Display (col. 3, lines 11-67 and col. 4, lines 1-44); Shin further **teaches** a semiconductor device including at least a pixel portion, a driver circuit for the pixel portion, and a memory portion wherein, said pixel portion is formed over a first substrate, said driver circuit for the pixel portion and said memory portion are formed over a second substrate, said second substrate is provided in a region except for said pixel portion on said first substrate and is connected with said pixel region such that a signal from said driver circuit for the pixel portion is input to said pixel portion, and the semiconductor device has a function for displaying an image in accordance with image data stored in said memory portion (col. 4, lines 1-40).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Yamazaki et al. the feature as taught by Shin in order to provide an improved driving circuit for a liquid crystal display that has a low power consumption and a small occupation area (col. 3, lines 11-17, Shin).

Art Unit: 2673

Regarding claims 39 and 43-44, Shin further **teaches** a semiconductor device wherein said semiconductor device is composed of a first region (first substrate) having a function of displaying the image, and a second region (second substrate) having a function of supplying the image data to said first region, said first region includes the substrate on which the pixel portion is formed, and the semiconductor device includes a first display method of displaying the image in accordance with the image data supplied from said second region and a second display method of displaying the image in accordance with the image data stored in the memory portion provided in said first region (col. 4, lines 10-40). Still further, Shin **teaches** the first display method is controlled by a CPU provided in the second region (col. 4, lines 23-33). It being understood that the second display method can be performed with a state in which the power source of the said CPU is turned off in that the data drivers would maintain the image signal driving the pixel matrix, said image signal is not dependent on the CPU power source.

Allowable Subject Matter

6. Claim 33 and 33/44 are allowed.

7. The following is an examiner's statement of reasons for allowance:

Regarding claim 33, the major differences between the teachings of the prior are of record (USP 6,646,288, Yamazaki et al. and USP 6,323,836, Shin) and that of the instant invention is that said prior art of record **does not teach** a semiconductor device comprising at least a pixel portion, a data line side driver circuit, a scanning line side driver circuit and a memory portion wherein the pixel portion is formed over a first substrate, the data line side driver circuit and said memory portion are formed over a second substrate and said scanning line side drive circuit is integrally formed over a third substrate.

Art Unit: 2673

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,118,502	Yamazaki et al.
U. S. Patent Application No.	2003/0160236	Yamazaki et al.
U. S. Patent Application No.	2003/9958195	Adachi et al.

Responses

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 306-0377.



Vincent E. Kovalick

December 19, 2003



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600